Environmental Water Use (EWU) Overview

What We Did
What We Heard
What We Would Like Early Input On

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- An overview of methods and assumptions used to quantify four categories of EWU in Bulletin 160-98.
- General comments received from public on B160-98.
- Early input needed from AC to proceed with California Water Plan (CWP)- Update 2003.

Part I

"What We Did"

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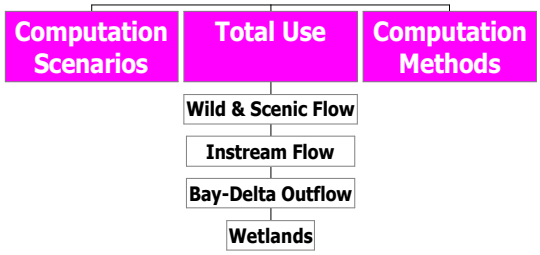
- This section highlights the methods used in the development of Bulletin 160-98. It is intended to provide base information for AC use in the -03 process. It is not intended to be a roadmap of what will or should be done in the 2003 update.

Total Environmental Water Use



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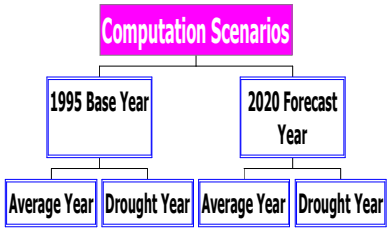
- Total EWU was computed as the sum of the four categories of use.
- Wild and Scenic: Dedicated natural runoff in designated streams under State and Federal laws.
- Instream Flow: Flow in a stream dedicated to beneficial uses.
- Bay-Delta Outflow: Flow required to maintain Delta salinity standards under SWRCB Plan' 95.
- Wetlands: Water used at managed freshwater wetlands.

Computation Scenarios



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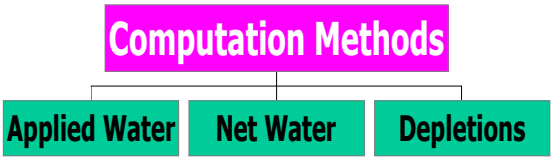
- Environmental water use was computed for 1995 Level (Base Year) and the 2020 Level (Forecast Year).
- For each level, two scenarios were presented: Average Year and Drought Year.

Computation Methods



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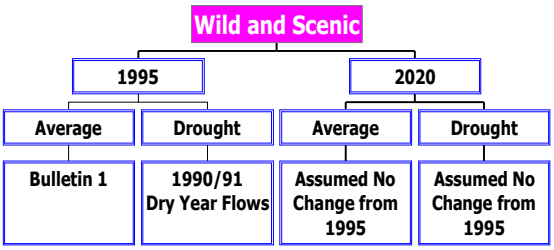
Three basic methods were used to compute quantities of environmental water use:

- **Applied water**: Amount of water delivered to meet dedicated environmental uses. It explicitly includes the re-use water as a source of supply to meet the demand.
- **Net water**: Amount of water needed to meet environmental uses. It does not include re-use as a source of supply.
- **Depletion water**: Amount of dedicated environmental water proceeding to a salt sink after use or lost through wetlands consumptive use. This water is no longer available as a source of supply.
- For more general discussion of Applied water, Net water and Depletion water, please refer to the Framework Assumptions.

Wild and Scenic Methodology



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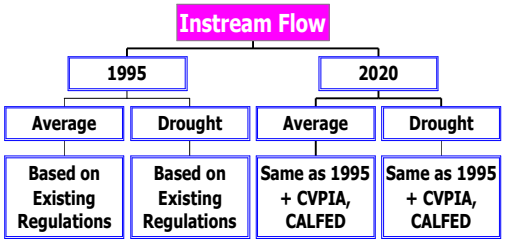
- 1995 Level: Estimates for Average Year were based on long-term average (1895-1947) unimpaired flow from DWR Bulletin 1 published in 1951. Drought Year use was based on 1990 and 1991 dry year flows.
- 2020 Level: It was assumed that the rivers established by law as Wild and Scenic at 1995 level would be the same in the year 2020.
- Note : List of Federal and State Wild and Scenic Rivers (1995 Level)

- Smith
- Klamath
- Eel
- Big Sur
- Sisquoc
- Sespe
- MF Feather
- NF American
- Lower American
- Tuolumne
- Merced
- Kings
- NF Kern
- SF Kern
- EF Carson
- W Walker

Instream Flow Methodology



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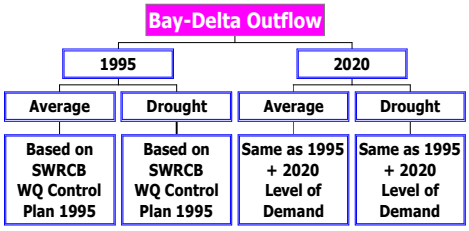
- 1995 Level: Estimates for Average and Drought year use was based on existing regulations established by the SWRCB, Detp. of Fish and Game agreements, Federal Energy Regulatory Commission (FERC) permits, court decisions, or by other agreements.
- 2020 Level: It was assumed that all flows established at the 1995 level would continue at the 2020 level except the CALFED and CVPIA programs would be implemented.
- List of Instream Fish Flows (1995 Level):

- Klamath	- Nacimiento	- Bear	- E. Walker
- Trinity	- Piru	- American	-Mono tri.
- Mad	- Sacramento	- Mokelumne	-Owens
- Eel	- Clear Creek	- Stanislaus	
- Russian	- Cache Creek	- Tuolumne	
- Lagunitas	- Putah Creek	- Merced	
- Walker Cr.	– Fearther	- Vernalis	
- Carmel	- Yuba	- Truckee	

Bay-Delta Outflow Methodology



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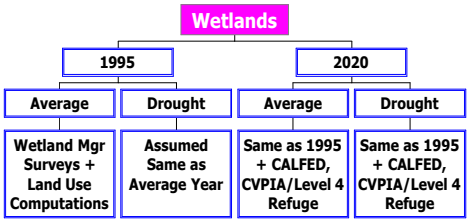
- 1995 Level: Average and Drought year outflow were based on SWRCB Water Quality Control Plan' 95 (Order WR 95-6) requirements. Operation studies, using DWRSIM, were used to quantify the required Delta outflow.
- 2020 Level: The same SWRCB Plan' 95 requirements as in 1995 level but a higher 2020 level of demand was assumed in DWRSIM operation studies.
- Note: DWRSIM (DWR SIMulation) is a reservoir operation model developed by DWR to study SWP/CVP water supply scenarios under different hydrologic conditions. A newer version CALSIM, recently developed by DWR, is available for use in CWP- Update 2003.

Wetlands Methodology



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- 1995 Level: Average wetlands use was based on information from wetlands managers and from land use computations. The same estimates were assumed for Drought year.
- 2020 Level: Average and Drought year water use was assumed to continue to 2020 plus additional demands by CALFED, Central Valley Project Improvement Act (CVPIA) and Level 4 refuge programs

Part II **"What We Heard"** **General Issues and comments Regarding Bulletin 160-98** 10	▪ This section was drawn from comments received during either the 1999 workshops on B160-98 or the CWP-Update 2003 scoping workshops held in early 2000. (The complete list was presented to you in your January 18, 2001 meeting materials) ▪ The section is meant to capture the range of perspectives that were offered by the public during those sessions. Many of these comments present significant matters for the Department and the AC to discuss. The comments, however, come from vastly different, and occasionally even mutually-exclusive, perspectives, on how the Update could be or should be changed from the 1998 version. • Inclusion of the comments should not be seen as an endorsement by the Department of the comment or agreement with its underlying premise, other than as a starting point for potential dialogue.
• **Bulletin 160 does not include all environmental uses (forests and natural vegetation).** • **Bulletin 160 does not compute the real "needs" of the environment.** • **Environmental instream use is not fairly compared to Urban and Ag use.** • **Applied water use, net water use and depletion methods do not make sense for Wild & Scenic flows.** 11	**B L A N K**
• **Environment "needs" more water in a drought.** • **Consider impacts of CALFED, CVPIA, FERC re-licensing on future projections.** • **Identify "data gaps" and update existing data.** 12	**B L A N K**

Part III **"What We Would Like Early Input on"** **(Policy, process and Resource Issues)** 12	▪ This section lists issues that the Department believes need to be addressed relatively early in the update process, particularly in light of the Department's statutory requirement to release, by January 1, 2002, a preliminary draft of the "assumptions and other estimates upon which the [2003 Update] will be based." (See Water Code Section 10004.6, distributed in your 1.18.01 meeting binder). ▪ At the March 8, 2001, Advisory Committee meeting, Advisory Committee members will have the opportunity to discuss this list and make their own suggestions for additions or modifications.
• **Assumptions and Methods adequate?** • **Fair comparison with Urban and Ag?** • **Consumptive vs. Non-consumptive?** • **Environmental water re-use?** • **"Needs-based" approach?** • **Drought scenarios of environmental water?** • **How to include environmental water requirements of future projects (CALFED, CVPIA, FERC relicensing)?** 14	• Generally, are assumptions and methods used in B160-98 to compute the components of EWU adequate? • Should EWU be compared and presented differently in relation to Urban and Ag use ? • Should EWU quantity be broken down into Consumptive and Non-consumptive ? • How should "re-use" component of EWU be quantified and presented? • Should "needs-based" approach be considered? • How should drought scenarios impact EWU? • How should CALFED, CVPIA, FERC re-licensing or other future wetland developments (e.g. Central Valley Joint Habitat Venture Plan) be included in future projection of EWU?